San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 0 3 2016

Mr. Mike Kandris
Pacific Ethanol Stockton LLC
3028 Navy Dr
Stockton, CA 95206-1165

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-7365
Project # N-1153189

Dear Mr. Kandris:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project authorizes the installation of two oxidizers, each driving a turbine which powers an electrical generator and a heat recovery steam generator and establishes a combined annual emissions limit.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Installation of two 25 MMBtu/hr Power Oxidizers Driving a Turbine
with a Heat Recovery Steam Generator

Facility Name:	Pacific Ethanol Stockton, LLC	Date:	April 25, 2016
Mailing Address:	3028 Navy Drive Stockton, CA 95206	Engineer:	Jesse A. Garcia
		Lead Engineer:	Joven Refuerzo
Contact Person:	Michael Kandris		
Telephone:	(916) 403-2124		
Fax:	(916) 446-3937		
Application #(s):	N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0		
Project #:	N-1153189		
Deemed Complete:	January 4, 2016		

I. PROPOSAL

Pacific Ethanol Stockton, LLC (PES) operates an existing ethanol production facility and is proposing the following modifications.

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9:
The applicant is applying to modify the existing ethanol manufacturing operation to allow for the option to divert exhaust from the process vent gas scrubber and CO2 scrubber into the proposed power oxidizers of the new cogeneration systems under permit N-7365-35 and '-36 (see below). Currently, the process streams from both scrubbers are vented to a regenerative thermal oxidizer (RTO). The applicant proposes to retain the option to use this RTO as a backup system in case the cogeneration systems are not in operation during maintenance and repair. In addition, the applicant has proposed to establish a Specific Limiting Condition (SLC) for the RTO and process emissions routed through the RTO, the boilers (N-7365-20-5, '-21-5 and '-22-5, see below) and cogeneration systems (including process emissions) (N-7365-35-0 and '-36-0, see below) for maximum operational flexibility.

For these permit units, existing Authority to Construct (ATC) permits exist to increase the annual ethanol production and reduce combined VOC emission factors as authorized in Project N-1151366. Therefore, the following condition will be included on the subject ATCs issued in this project:

- Authority to Construct (ATC) N-7365-XX-XX shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201]

N-7365-20-5, '-21-5 and '-22-5:
The applicant has proposed to establish an SLC for the boilers, cogeneration systems (including process emissions), and RTO for maximum operational flexibility. The applicant is not proposing any increase in emissions or utilization from these units.

N-7365-35-0 and '-36-0:
The applicant has proposed to install two cogeneration systems. Each cogeneration system will consist of a power oxidizer, a compressor-turbine-generator system, and a heat recovery steam generator (HRSG). Each system is expected to generate 2 MW of electricity and 13,000 lb/hr of steam. These systems will be fueled on natural gas from PG&E's supply to the facility and waste gas from ethanol production processes. Currently, the waste gas from ethanol production processes is combusted in the RTO listed under permits N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, and '-11-9.

All Units
Since the applicant is proposing to establish an SLC, it is necessary that all ATCs be implemented concurrently; therefore, the following condition will be included on the ATCs issued in this project:

- This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201]

PES has a Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. PES must apply to administratively amend their Title V permit.

II. APPLICABLE RULES

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (11/26/12)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99) *40 CFR Part 60, Subpart VVa: Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006* *40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*
Rule 4002	National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (02/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing, Facilities, and Chemical Plants (4/20/05)
Rule 4623 Storage of Organic Liquids (5/19/05)
Rule 4703 Stationary Gas Turbines (9/20/07)
Rule 4801 Sulfur Compounds (12/17/92)
40 CFR Part 64 Compliance Assurance Monitoring (CAM)
California Health & Safety Code 41700 (Public Nuisance)
California Health & Safety Code 42301.6 (School Notice)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. PROJECT LOCATION

The facility is located at 3028 Navy Drive, Stockton, California. There is no K-12 school located within 1,000 feet of this address. Therefore, school notice is not required under California Health & Safety Code 42301.6.

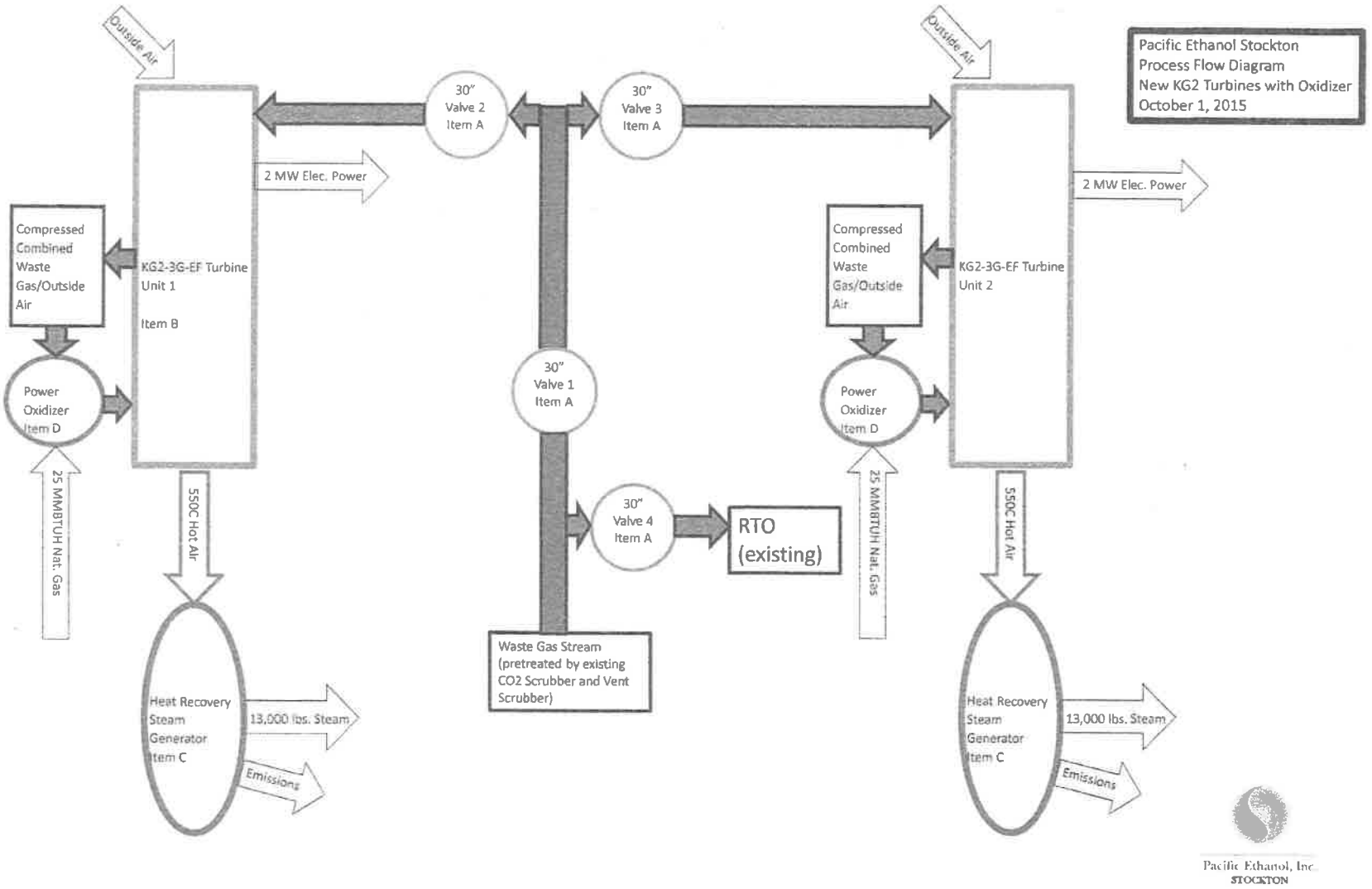
IV. PROCESS DESCRIPTION

This facility is in the business of receiving, producing and shipping denatured ethanol.

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9
There are no proposed changes to the existing processes except for diverting the discharge from the scrubbers to the power oxidizers of the cogeneration systems under permits N-7365-35 and/or '-36.

N-7365-20-5, '-21-5, '-22-5
The boilers will continue to be used to produce steam to support the ethanol production processes and there are no proposed changes to the process.

N-7365-35-0 and '-36-0
Each cogeneration system will use an power oxidizer to combust a mixture of compressed waste gas, air and natural gas fuel. The combusted gases will drive the turbine blades to rotate its shaft which is connected to a compressor and an electric generator. After driving the turbine, these gases will be routed to an unfired heat recovery steam generator (HRSG) to recover thermal energy to produce steam, which will be used in the production processes at the ethanol plant. See process flow diagram on next page.


Pacific Ethanol Stockton
Process Flow Diagram
New KG2 Turbines with Oxidizer
October 1, 2015
Outside Air
Outside Air
30" Valve 2 Item A
30" Valve 3 Item A
2 MW Elec. Power
2 MW Elec. Power
Compressed Combined Waste Gas/Outside Air
KG2-3G-EF Turbine Unit 1
Item B
Compressed Combined Waste Gas/Outside Air
KG2-3G-EF Turbine Unit 2
30" Valve 1 Item A
Power Oxidizer Item D
Power Oxidizer Item D
25 MMBTUH Nat. Gas
550C Hot Air
30" Valve 4 Item A
RTO (existing)
25 MMBTUH Nat. Gas
550C Hot Air
Waste Gas Stream (pretreated by existing CO2 Scrubber and Vent Scrubber)
Heat Recovery Steam Generator Item C
13,000 lbs. Steam
Emissions
Heat Recovery Steam Generator Item C
13,000 lbs. Steam
Emissions
Pacific Ethanol, Inc.
STOCKTON

V. EQUIPMENT LISTING

Pre-Project Equipment Description:

Permit #	Pre-Project Equipment Description
N-7365-4-5	ONE 18,500 GALLON SLURRY TANK AND ONE 78,050 GALLON SLURRY MIX TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-5, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-5-5	29,653 GALLON YEAST TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-6-4	ONE 177,748 GALLON LIQUEFACTION TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-7, '-8, '-9, -10 AND '-11)
N-7365-7-5	FERMENTATION PROCESS CONSISTING OF FOUR 705,000 GALLON FIXED ROOF PROCESS TANKS, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-8) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-8). THE EXHAUST FROM THE PROCESS TANKS IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11)

Permit #	Pre-Project Equipment Description
N-7365-8-6	ONE 928,526 GALLON FIXED ROOF BEERWELL PROCESS TANK, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-7) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-7). THE EXHAUST FROM THE PROCESS TANK IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11)
N-7365-9-3	DISTILLATION PROCESS CONSISTING OF ONE DE-GAS VESSEL, ONE BEER STRIPPER, ONE SIDE STRIPPER, ONE RECTIFIER, TWO MOLECULAR SIEVES AND ONE 200 PROOF ETHANOL CONDENSER, ALL SERVED BY KOCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-10 AND '-11)
N-7365-10-4	ONE 190,400 GALLON PROCESS CONDENSATE TANK, COLLECTING WATER FROM THE CO2 AND VENT GAS SCRUBBERS, SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-11)

Permit #	Pre-Project Equipment Description
N-7365-11-7	WET CAKE PROCESS CONSISTING OF ONE 194,400 GALLON WHOLE STILLAGE TANK, ONE CENTRIFUGE SYSTEM WITH FIVE CENTRIFUGES, ONE 127,000 GALLON THIN STILLAGE TANK, THREE EVAPORATORS, ONE 129,600 GALLON SYRUP TANK, CORN OIL EXTRACTION SYSTEM CONSISTING OF ONE 36,000 GALLON HEAT SOAK TANK, THREE CENTRIFUGES, ONE 800 GALLON BUFFER TANK, ONE 1,285 GALLON FINAL PRODUCT TANK, THREE 10,500 GALLON CORN OIL LOADOUT STORAGE TANKS ALL SERVED BY AN KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-10) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-10) AND A TRUCK LOADOUT SYSTEM
N-7365-20-4	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #1)
N-7365-21-4	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #2)
N-7365-22-4	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #3)

Proposed Modification:

Permit #	Proposed Modification
N-7365-4-7	MODIFICATION OF ONE 18,500 GALLON SLURRY TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-5, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36
N-7365-5-7	MODIFICATION OF 29,653 GALLON YEAST TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-6, '-7, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36
N-7365-6-5	MODIFICATION OF ONE 177,748 GALLON LIQUEFACTION TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-7, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

Permit #	Proposed Modification
N-7365-7-6	MODIFICATION OF FERMENTATION PROCESS CONSISTING OF FOUR 705,000 GALLON FIXED ROOF PROCESS TANKS, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-8) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-8). THE EXHAUST FROM THE PROCESS TANKS IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36
N-7365-8-7	MODIFICATION OF ONE 928,526 GALLON FIXED ROOF BEERWELL PROCESS TANK, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-7) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-7). THE EXHAUST FROM THE PROCESS TANK IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

Permit #	Proposed Modification
N-7365-9-4	MODIFICATION OF DISTILLATION PROCESS CONSISTING OF ONE DE-GAS VESSEL, ONE BEER STRIPPER, ONE SIDE STRIPPER, ONE RECTIFIER, TWO MOLECULAR SIEVES AND ONE 200 PROOF ETHANOL CONDENSER, ALL SERVED BY KOCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36
N-7365-10-5	MODIFICATION OF ONE 190,400 GALLON PROCESS CONDENSATE TANK, COLLECTING WATER FROM THE CO2 AND VENT GAS SCRUBBERS, SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

Permit #	Proposed Modification
N-7365-11-9	MODIFICATION OF WET CAKE PROCESS CONSISTING OF ONE 194,400 GALLON WHOLE STILLAGE TANK, ONE CENTRIFUGE SYSTEM WITH FIVE CENTRIFUGES, ONE 127,000 GALLON THIN STILLAGE TANK, THREE EVAPORATORS, ONE 129,600 GALLON SYRUP TANK, CORN OIL EXTRACTION SYSTEM CONSISTING OF ONE 36,000 GALLON HEAT SOAK TANK, THREE CENTRIFUGES, ONE 800 GALLON BUFFER TANK, ONE 1,285 GALLON FINAL PRODUCT TANK, TWO 10,500 GALLON CORN OIL LOADOUT STORAGE TANKS ALL SERVED BY AN KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-10) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-10) AND A TRUCK LOADOUT SYSTEM: ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36
N-7365-20-5	MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #1): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36
N-7365-21-5	MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #2): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36
N-7365-22-5	MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #3): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36

Permit #	Proposed Modification
N-7365-35-0	COGENERATION SYSTEM #1 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR
N-7365-36-0	COGENERATION SYSTEM #2 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR

Post-Project Equipment Description:

Permit #	Post-Project Equipment Description
N-7365-4-7	ONE 18,500 GALLON SLURRY TANK AND ONE 78,050 GALLON SLURRY MIX TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-5, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-5-7	29,653 GALLON YEAST TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)

Permit #	Post-Project Equipment Description
N-7365-6-5	ONE 177,748 GALLON LIQUEFACTION TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-9, '-10 AND '-11) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-7-6	FERMENTATION PROCESS CONSISTING OF FOUR 705,000 GALLON FIXED ROOF PROCESS TANKS, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-8) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-8). THE EXHAUST FROM THE PROCESS TANKS IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-8-7	ONE 928,526 GALLON FIXED ROOF BEERWELL PROCESS TANK, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-7) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-7). THE EXHAUST FROM THE PROCESS TANK IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)

Permit #	Post-Project Equipment Description
N-7365-9-4	DISTILLATION PROCESS CONSISTING OF ONE DE-GAS VESSEL, ONE BEER STRIPPER, ONE SIDE STRIPPER, ONE RECTIFIER, TWO MOLECULAR SIEVES AND ONE 200 PROOF ETHANOL CONDENSER, ALL SERVED BY KOCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-10 AND '-11) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-10-5	ONE 190,400 GALLON PROCESS CONDENSATE TANK, COLLECTING WATER FROM THE CO2 AND VENT GAS SCRUBBERS, SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-11) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)
N-7365-11-9	WET CAKE PROCESS CONSISTING OF ONE 194,400 GALLON WHOLE STILLAGE TANK, ONE CENTRIFUGE SYSTEM WITH FIVE CENTRIFUGES, ONE 127,000 GALLON THIN STILLAGE TANK, THREE EVAPORATORS, ONE 129,600 GALLON SYRUP TANK, CORN OIL EXTRACTION SYSTEM CONSISTING OF ONE 36,000 GALLON HEAT SOAK TANK, THREE CENTRIFUGES, ONE 800 GALLON BUFFER TANK, ONE 1,285 GALLON FINAL PRODUCT TANK, THREE 10,500 GALLON CORN OIL LOADOUT STORAGE TANKS ALL SERVED BY AN KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-10) WHICH IS VENTED TO EITHER A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER (RTO) WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER OR POWER OXIDIZERS OF COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND/OR N-7365-36 (RTO AND POWER OXIDIZERS SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11)

Permit #	Post-Project Equipment Description
N-7365-20-5	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #1)
N-7365-21-5	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #2)
N-7365-22-5	75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #3)
N-7365-35-0	COGENERATION SYSTEM #1 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR
N-7365-36-0	COGENERATION SYSTEM #2 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9

Currently, the scrubbers and the RTO system are required to achieve at least 99.5% control for VOC emissions. The proposed power oxidizers are expected to maintain the existing control efficiency for VOC emissions.

N-7365-20-5, '-21-5 and '-22-5

The applicant is not proposing any changes to the existing emission control equipment; therefore, no further discussion is required.

N-7365-35-0 and '-36-0

The cogeneration systems will not be equipped with any add-on control equipment. The emissions are expected to be minimized by firing on PUC-quality natural gas and by maintaining the power oxidizers under pressure to keep the combustion temperature low enough to minimize thermal NOx from forming yet high enough to achieve autoignition and complete combustion.

VII. GENERAL CALCULATIONS

A. Assumptions

To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal Major Modification for PM2.5 will specific PM2.5 emission calculations be performed.

B. Emission Factors (EF)

1. Pre-Project Emission Factors (EF1)

N-7365-4-5, '-5-5, '-6-4, '-7-5, '-8-6, '-9-3, '-10-4, '-11-7
The applicant is not proposing any changes to the emission factors in this project. Furthermore, this project would not result in any changes to the potential emissions for these units except for the PM10 emissions from the RTO which is being revised similarly to the boilers as explained below. Therefore, EF1 are not listed here.

Note that the potential emissions for each permit unit are available in the application review under project N-1151366.

N-7365-20-4, '-21-4 and '-22-4
For each boiler,

Pollutant	EF1		Source
	lb/MMBtu	ppmvd @ 3% O2	
NO_x	0.008	7	PTO N-7365-20-5, '-21-5 and '-22-5
SO_x	0.00285	--	
CO	0.037	50	
VOC	0.0013	3	
PM_{10}	0.0076*	--	
	0.003*	--	District FYI-328

* Pursuant to District Policy APR 1110, *Using Revised Emission Factors*, the emission factor of 0.0076 lb/MMBtu, which came from AP-42, Chapter 1.4, for natural gas combustion, will be revised to 0.003 lb/MMBtu per District FYI-328.

N-7365-35-0 and '-36-0
Since these are new emissions units, EF1 = 0 for all pollutants.

2. Post-Project Emission Factors (EF2)

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9
The applicant is not proposing any changes to the existing emission factors. Thus, EF2 will be same as EF1.

N-7365-20-5, '-21-5 and '-22-5
EF2 will be same EF1.

N-7365-35-0 and '-36-0

Pollutant	EF2		Source
	lb/MMBtu	ppmvd @ 15% O2	
NO_x	0.0062	0.8	Applicant's proposal (see page 2 of the attachment of e-mail on 11/23/15 included in Attachment VIII)
CO	0.0226	4.8	
SO_x	0.00285	--	District Policy APR 1720
PM_{10}	0.003	--	District FYI-328
VOC	0.0055	--	Applicant's proposal for incomplete combustion of natural gas in the power oxidizer (see e-mail on 2/9/16 included in Attachment VIII). VOC emissions from the waste gas are limited by the conditions proposed in the Daily Emissions Limit section below.

Note that the exhaust gas from the scrubbers can be routed to the power oxidizers of the cogeneration systems. The mass emission rates are converted into pounds per MMBtu, and mass emission rates are converted into concentrations using exhaust flow rate and oxygen content in the discharge as detailed in the applicant's November 23, 2015 email response included in Attachment VIII.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-7365-4-5, '-5-5, '-6-4, '-7-5, '-8-6, '-9-3, '-10-4, '-11-7
The following tables summarize the potential emissions from each permit unit. The values are taken from the application review under project N-1151366, except PM10 for the RTO which is calculated as follows:

Daily PE1 = EF1 (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Schedule (hrs/day)
= 0.003 lb/MMBtu x 2.4 MMBtu/hr x 24 hrs/day
= 0.2 lb-PM10/day

Annual PE1 = EF1 (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Schedule (hrs/yr)
= 0.003 lb/MMBtu x 2.4 MMBtu/hr x 8,760 hrs/yr
= 63 lb-PM10/yr

It should be noted that the emissions from the combustion of natural gas in the RTO are all accounted for under permit unit '-4. The VOC emissions listed for the other units are the controlled process emissions from the vent gas scrubber/CO2 scrubber venting to the RTO as calculated in Project N-1151366, unless otherwise noted.

Daily:

Pollutant	'-4-5	'-5-5	'-6-4	'-7-5	'-8-6	'-9-3	'-10-4	'-11-7
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
NO_x	2.9	0	0	0	0	0	0	0
SO_x	0.2	0	0	0	0	0	0	0
PM_{10}	0.2	0	0	0	0	0	0	0
CO	4.8	0	0	0	0	0	0	0
VOC	0.9	1.2	1.2	23.1	19.9	4.5	0.9	41.4[1]

Annual:

Pollutant	'-4-5	'-5-5	'-6-4	'-7-5	'-8-6	'-9-3	'-10-4	'-11-7
	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
NO_x	1,051	0	0	0	0	0	0	0
SO_x	60	0	0	0	0	0	0	0
PM_{10}	63	0	0	0	0	0	0	0
CO	1,766	0	0	0	0	0	0	0
VOC	232	339	334	3,267	2,106	1,517	208	15,040[2]

N-7365-20-4, '-21-4 and '-22-4

The potential emissions from each permit unit are summarized in the following table. Note that the three boilers also have a combined heat input rate of 1,392.84 MMscf/yr. The PM10 emissions are calculated below:

Daily PE1 = EF1 (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Schedule (hrs/day)
= 0.003 lb/MMBtu x 75.6 MMBtu/hr x 24 hrs/day
= 5.4 lb-PM10/day

Annual PE1 = EF1 (lb/MMBtu) x Fuel Usage Limit (MMscf/year) x 1,000 (Btu/scf)
= 0.003 lb/MMBtu x 1,392.84 MMscf/yr 1,000 (Btu/scf)
= 63 lb-PM10/yr

The other pollutants were calculated similarly to PM10 under project N-1103796 and are summarized below:

[1] 41.4 lb-VOC/day = 0.6 lb/day from controlled process emissions from vent gas scrubber venting to RTO + 35.4 lb/day from syrup loading + 0 lb/day from corn loading + 5.4 lb/day from fugitives
[2] 15,040 lb-VOC/year = 116 lb/year from controlled process emissions from vent gas scrubber venting to RTO + 12,935 lb/year from syrup loading + 1 lb/year from corn loading + 1,988 lb/year from fugitives

Pollutant	PE1 for each unit	PE1 for all three boilers
	lb/day/unit	lb/yr
NO_x	14.5	11,143
SO_x	5.2	3,970
PM_{10}	5.4	4,179
CO	67.1	51,535
VOC	2.4	1,811

N-7365-35-0 and '-36-0
Since these are new emissions units, PE1 = 0 for all pollutants.

Summary of PE1 Emissions					
Permit #	**NO_x**	**SO_x**	**PM_{10}**	**CO**	**VOC**
N-7365-4-5	1,051	60	63	1,766	232
N-7365-5-5	0	0	0	0	116
N-7365-6-4	0	0	0	0	116
N-7365-7-5	0	0	0	0	1,878
N-7365-8-6	0	0	0	0	1,878
N-7365-9-3	0	0	0	0	116
N-7365-10-4	0	0	0	0	116
N-7365-11-7 (controlled ethanol production emissions from RTO)	0	0	0	0	116
N-7365-11-7 (syrup & corn loading)*	0	0	0	0	12,936 (12,935 + 1)*
N-7365-11-7 (fugitives)	0	0	0	0	1,988
N-7365-20-4	11,143	3,970	4,179	51,535	1,811
N-7365-21-4					
N-7365-22-4					

*Process emissions that are not released through RTO

2. Post Project Potential to Emit (PE2)

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9
Although PES will route the exhaust to the power oxidizers, they propose to retain the use of the RTO and use it when the cogeneration systems are down for maintenance and repair. Therefore, PE2 is set equal to PE1.

Note that each permit will have an SLC for the RTO and the process emissions routed through the RTO, the boilers and the proposed cogeneration systems and the process emissions routed through the proposed cogeneration systems since the facility is proposing no net increase in potential emissions from this project.

N-7365-20-5, '-21-5 and '-22-5
The applicant is not proposing any changes to the existing emission factors; therefore, PE2 will be equal to PE1 for each unit.

Note that each permit will have an SLC for the proposed cogeneration systems, boilers, the RTO and the process emissions routed through the RTO since the facility is proposing no net increase in potential emissions from this project.

N-7365-35-0 and '-36-0
The emissions from each unit are calculated in the following section:

Startup:
During initial startup or startup after maintenance, the heat input rate to each power oxidizer will gradually be increased to 35 MMBtu/hr. The maximum heat input stays at 35 MMBtu/hr for a one hour period, and then gradually decreases to 25 MMBtu/hr in the following hour. This increase and decrease in heat input is expected to last for no more than 2 hours per day and 2 hours per year. For conservative calculations, it is assumed that heat input during this transition period is 35 MMBtu/hr.

PE2 (lb/hr) = EF2 lb/MMBtu x 35 MMBtu/hr
PE2 (lb/day) = EF2 lb/MMBtu x 35 MMBtu/hr x 2 hr/day
PE2 (lb/yr) = EF2 lb/MMBtu x 35 MMBtu/hr x 2 hr/yr

Pollutant	EF2 (lb/MMBtu)	PE2, each (lb/hr)	PE2, each (lb/day)	PE2, each (lb/yr)
NOx	0.0062	0.217	0.4	0
SOx	0.00285	0.100	0.2	0
PM_{10}	0.003	0.105	0.2	0
CO	0.0226	0.791	1.6	2
VOC	0.0055	0.193	0.4	0

Steady state:
Heat input rate to each power oxidizer will be 25 MMBtu/hr. The potential emissions from each power oxidizer are calculated using the following equations:

PE2 (lb/day) = EF2 lb/MMBtu x 25 MMBtu/hr x 22 hr/day
PE2 (lb/yr) = EF2 lb/MMBtu x 25 MMBtu/hr x 8,758 hr/yr

Pollutant	EF2 (lb/MMBtu)	PE2, each (lb/hr)	PE2, each (lb/day)	PE2, each (lb/yr)
NOx	0.0062	0.155	3.4	1,357
SOx	0.00285	0.071	1.6	624
PM_{10}	0.003	0.075	1.7	657
CO	0.0226	0.565	12.4	4,948
VOC	0.0055	0.138	3.0	1,204

Total:

Pollutant	PE2, each (lb/hr)	PE2, each (lb/day)	PE2, each (lb/yr)
NOx	0.217	3.8	1,357
SOx	0.100	1.8	624
PM_{10}	0.105	1.9	657
CO	0.791	14.0	4,950
VOC	0.193	3.4	1,204

Note that each permit will include a not to exceed emission limit of combined annual emissions for all pollutants for the power oxidizer, boilers, the RTO, and process emissions routed through the RTO since the facility is proposing no net increase in potential emissions from this project for NOx, CO and VOC. The proposed combined annual emissions limit is presented below:

Combined Annual Emissions Limit					
Permit #	**NO_x**	**SO_x**	**PM_{10}**	**CO**	**VOC**
N-7365-4-7	12,194	4,654	4,899	53,301	6,379
N-7365-5-6					
N-7365-6-5					
N-7365-7-6					
N-7365-8-7					
N-7365-9-4					
N-7365-10-5					
N-7365-20-5					
N-7365-21-5					
N-7365-22-5					
N-7365-35-0					
N-7365-36-0					
N-7365-11-9 (controlled ethanol production emissions from RTO or cogeneration systems)					
N-7365-11-9 (syrup & corn loading)*	0	0	0	0	12,936*
N-7365-11-9 (fugitives)	0	0	0	0	1,988

*Process emissions that are not released through RTO or cogeneration systems

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which

have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

All values are taken from Project N-1151366, except for units '-20, '-21, '-22 which are calculated in Section VII.C.1 above.

SSPE1 (lb/yr)					
Permit #	NO_x	SO_x	PM_{10}	CO	VOC
N-7365-1-3	0	0	4,051	0	0
N-7365-2-2	0	0	2,162	0	0
N-7365-3-2	0	0	2,162	0	0
N-7365-4-5	**1,051**	**60**	**63**	**1,766**	**232**
N-7365-5-5	**0**	**0**	**0**	**0**	**116**
N-7365-6-4	**0**	**0**	**0**	**0**	**116**
N-7365-7-5	**0**	**0**	**0**	**0**	**1,878**
N-7365-8-6	**0**	**0**	**0**	**0**	**1,878**
N-7365-9-3	**0**	**0**	**0**	**0**	**116**
N-7365-10-4	**0**	**0**	**0**	**0**	**116**
N-7365-11-7 (controlled ethanol production emissions from RTO)	**0**	**0**	**0**	**0**	**116**
N-7365-11-7 (non-fugitives)*	**0**	**0**	**0**	**0**	**12,936***
N-7365-12-2	0	0	0	0	4,420
N-7365-13-3	0	0	0	0	384
N-7365-14-3	0	0	0	0	479
N-7365-15-3	0	0	0	0	479
N-7365-16-3	0	0	0	0	992
N-7365-17-3	0	0	0	0	992
N-7365-19-5	0	0	0	0	8,292
N-7365-20-4	**11,143**	**3,970**	**4,179**	**51,535**	**1,811**
N-7365-21-4					
N-7365-22-4					
N-7365-23-2	0	0	934	0	0
N-7365-29-1	313	0	6	49	15
N-7365-30-1	220	0	4	28	20
N-7365-31-1	0	0	0	0	18
N-7365-32-0	0	0	584	0	0
N-7365-33-2	0	0	0	0	606
N-7365-34-0	0	73	0	0	0
Plant Fugitive Emissions	0	0	0	0	11,429
ERC	0	0	0	0	0
SSPE1 w/o fugitives	12,727	4,103	14,145	53,378	36,012
SSPE1 with fugitives	12,727	4,103	14,145	53,378	47,441

*Process emissions that are not released through RTO

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/yr)					
Permit #	NO_x	SO_x	PM_{10}	CO	VOC
N-7365-1-3	0	0	4,051	0	0
N-7365-2-2	0	0	2,162	0	0
N-7365-3-2	0	0	2,162	0	0
N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5. '-35-0, '-36-0	**12,194**	**4,654**	**4,899**	**53,301**	**6,379**
N-7365-11-9 (syrup & corn loading)*	**0**	**0**	**0**	**0**	**12,936***
N-7365-12-2	0	0	0	0	4,420
N-7365-13-3	0	0	0	0	384
N-7365-14-3	0	0	0	0	479
N-7365-15-3	0	0	0	0	479
N-7365-16-3	0	0	0	0	992
N-7365-17-3	0	0	0	0	992
N-7365-19-5	0	0	0	0	8,292
N-7365-23-2	0	0	934	0	0
N-7365-29-1	313	0	6	49	15
N-7365-30-1	220	0	4	28	20
N-7365-31-1	0	0	0	0	18
N-7365-32-0	0	0	584	0	0
N-7365-33-2	0	0	0	0	606
N-7365-34-0	0	73	0	0	0
Plant Fugitive Emissions	0	0	0	0	11,429
ERC	0	0	0	0	0
SSPE1 w/o fugitives	12,727	4,727	14,802	53,378	36,012
SSPE1 with fugitives	12,727	4,727	14,802	53,378	47,441

*Process emissions that are not released through RTO or cogeneration systems

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165. PES produces ethanol by natural fermentation; therefore, the fugitive emissions will not be counted towards the Major Source determination.

Rule 2201 Major Source Determination (lb/year)						
	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC
SSPE1	12,727	4,103	14,145	14,145	53,378	36,012
SSPE2	12,727	4,727	14,802	14,802	53,378	36,012
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

Note: PM2.5 assumed to be equal to PM10

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	6.4	23.7	2.1	26.7	7.1	7.1
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	No	No	No	No	No	No

As shown above, the facility is an existing PSD major source for at least one pollutant.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Section 3.13 of Rule 2201 defines Clean Emission Unit as an emission unit that meets one of the following criteria:

- The unit is equipped with an emissions control technology with a minimum control efficiency of at least 95% (or at least 85% for lean-burn, internal combustion engines); or

- The unit is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11
The processes under these permits emit VOC emissions.

Process emissions:
The units generating VOC emissions are routed through emission control equipment, which is required to achieve 99.5% control for VOC emissions. These units are clean emission units; therefore, BE is set equal to PE1.

Fugitive emissions:
VOC concentration from valves, threaded connections, flanges, pressure relief valves, and process drains is limited to 100 ppmv, above the background concentration. In addition, VOC concentration from pumps and compressor is limited to 500 ppmv above the background concentration. These are considered achieved-in-practice standard per BACT guidelines 4.12.1 (valves and connectors) and 4.12.2 (pumps and compressor seals). These units are clean emission units; therefore, BE is set equal to PE1. (See Appendix II for BACT Guidelines)

Note that permit unit N-7365-11-7 contains some additional emissions units including corn oil and distiller syrup loading operations. These emissions units are Fully Offset Emission Units (defined in section 3.20 of Rule 2201) as offsets were provided to fully offset the equipment in project N-1132556. Therefore, BE is set equal to PE1.

N-7365-20, '-21, '-22
The boilers emit NOx, SOx, PM10, CO and VOC emissions.

NOx, SOx, PM10 and CO
This facility is not a major source for any of these pollutants. Therefore, BE is set equal to PE1.

VOC
The boilers are fueled on natural gas. This is considered achieved in practice BACT for boilers. Therefore, BE is set equal to PE1.

N-7365-35 and '-36
BE = 0 since these are new emission units.

7. SB-288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Per section VII.C.5 of this document, this facility is a Major Source for VOC emissions. Thus, analysis is required to determine if this project triggers an SB-288 Major Modification.

To determine if the proposed project triggers an SB-288 major modification, net emission increase (NEI) is calculated by determining the sum of the difference of PE2 and historical emissions (HE) of all the units involved in the project. This NEI value is then compared with the SB 288 Major Modification threshold of 50,000 lb-VOC/year.

$NEI = \sum(PE2 - HE)$

N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0, '-36-0

NEI would be highest if HE is set equal to zero. Thus,

$NEI = \sum PE2$
$= 6,379 + 12,936 = 19,315$ lb-VOC/yr

The total VOC emissions from the units involved in the project are less than the SB 288 Major Modification threshold. Therefore, it is concluded that this project will not be a SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Per section VII.C.5 of this document, this facility is a Major Source for VOC emissions. Thus, analysis is required to determine if this project triggers a Federal Major Modification.

N-7365-4 to '-11, '-20, '-21 and '-22:

Process emissions:
The emissions are calculated as follows:

Emission Increase = PAE – BAE – UBC

Where:

PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

UBC: Since this project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of Baseline Capacity (BC) that the emission units could have accommodated during the baseline period. Since the facility was recently constructed, in 2008, and has distilled 99% of their permitted limit of 60 million gallons/year in 2014 (actual = 59,104,440 gallons per the Emission Inventory Survey) and 88% of their permitted limit in 2013 (actual =

52,658,200 gallons per the Emission Inventory Survey) and because the facility was recently authorized to increase their throughput to 70 million gallons/year on December 10, 2015 (Project N-1151366), the BC is equal PE1. Therefore,

UBC = BC – BAE
= PE1 – BAE

Therefore, for the existing units,

Emission Increase = PAE – BAE – UBC
= PE2 – BAE – (PE1 – BAE)
= PE2 – PE1 but as discussed in Section VII.C.2, there is no net increase in emissions from this project; therefore, PE2 = PE1 and
Emission Increase = 0 lb/yr

N-7365-35-0, '-36-0

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

Emissions Increase = 1,204 lb-VOC/yr/unit x 2 units = 2,408 lb-VOC/yr

Note that these emissions include combustion of natural gas as well as ethanol waste stream from the scrubbers.

Summary:
The total emissions increase (EI) from this project is as follows:

Total EI = $EI_{Existing\ units} + EI_{New\ units}$
Total EI = 0 + 2,408
Total EI = 2,408 lb-VOC/yr

Since the emissions increase is above the zero threshold, this project is a Federal Major modification.

Federal Offset Quantities:

The Federal offset quantity is only calculated for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

VOC		Federal Offset Ratio	1.5
Permit No.	**Actual Emissions (lb/year)**	**Potential Emissions (lb/year)**	**Emissions Change (lb/yr)**
N-7365-4, '-5, '-6, '-9, '-10, '-11	302[3]	6,379	- -
N-7365-7, '-8	2,208[3]		- -
N-7365-20, '-21, '-22	0[4]		- -
N-7365-35, '-36	0		- -
Total	2,510	6,379	3,869
		Net Emission Change (lb/year):	3,869
		Federal Offset Quantity: (NEC * 1.5)	**5,804**

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

[3] These actual emissions are the same as was determined in project N-1151366 for the baseline period of May 2013 – April 2015.
[4] As a worst case, the emissions from these units is assumed to be 0.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	6.1	3.2	2.0	26.7	2.1	2.1
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen.

VIII. COMPLIANCE

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

N-7365-35 and '-36:
Per Section I, the applicant is proposing to install two power oxidizers which have a PE2 greater than 2.0 lb/day for NOx, CO and VOC emissions as calculated in section VII.C.2 of this document. The facility's total CO emissions are less than 200,000 lb/yr. Therefore, BACT is triggered for NOx and VOC emissions only for the power oxidizers.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

N-7365-4 to '-11, '-20, '-21 and '-22:
PE2 = PE1, EF2 = EF1, therefore, AIPE will be zero for each pollutant.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.8 above, this project constitutes a Federal Major Modification for VOC emissions. Therefore BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

N-7365-4 to '-11, '-20, '-21 and '-22:
Per section VII.C.8 of this document, for each permit unit, VOC emissions increase is zero pounds per year. Thus, BACT is not triggered.

N-7365-35 and '-36:
These are new units and BACT is already triggered for new emissions units with a PE > 2 lb/day.

2. BACT Guideline

N-7365-35 and '-36:
The District BACT clearinghouse does not include a BACT Guideline that applies to power oxidizers. Therefore a new BACT Guideline will be prepared for these power oxidizers. (See Appendix III)

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analyses (see Appendix III), BACT has been satisfied with the following:

N-7365-35 and '-36:
NO_X: emissions limit of 0.8 ppmvd @ 15% O2
VOC: emissions limit of 2.5 ppmvd @ 15% O2

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	12,727	4,727	14,802	53,378	47,441
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for VOC only. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

Per section VII.C.6, BE_{VOC} is equal to $PE1_{VOC}$ for the existing units. These are summarized in the following table.

Permit #	PE1 (lb/yr)
N-7365-4	232
N-7365-5	116
N-7365-6	116
N-7365-7	1,878
N-7365-8	1,878
N-7365-9	116
N-7365-10	116
N-7365-11	15,040*
N-7365-20	1,811
N-7365-21	
N-7365-22	
N-7365-35	0
N-7365-36	0
Total	21,303

**Including corn oil and distiller syrup process emissions and fugitive emissions.*

Also, there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = Σ ([PE2 - BE] + ICCE) x DOR
= Σ(PE2 - BE) x DOR
= [(PE2 - PE1) $_{\text{Existing units}}$ + (PE2 – PE1) $_{\text{New units}}$] x DOR
= [(PE2 $_{\text{Existing units}}$ + PE2 $_{\text{New units}}$) - (PE1 $_{\text{Existing units}}$ + PE1 $_{\text{New units}}$)] x DOR
= [21,303 lb-VOC/yr – 21,303 lb-VOC/yr] x DOR
= 0 lb-VOC/yr

As demonstrated in the calculation above, the amount of offsets is zero. Therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	12,727	12,727	20,000 lb/year	No
SO_X	4,103	4,727	54,750 lb/year	No
PM_{10}	14,145	14,802	29,200 lb/year	No
CO	53,378	53,378	200,000 lb/year	No
VOC	47,441	47,441	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	12,727	12,727	0	20,000 lb/year	No
SO_x	4,727	4,103	624	20,000 lb/year	No
PM_{10}	14,802	14,145	657	20,000 lb/year	No
CO	53,378	53,378	0	20,000 lb/year	No
VOC	47,441	47,441	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for being a Federal Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and to Environmental Protection Agency (EPA) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions[5]:

N-7265-4, '-5, '-6, '-9, and '-10 (Process Tanks)

- The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201]
- All vapors from the slurry tanks shall be vented through the vent gas scrubber and then through the RTO or power oxidizer(s) listed on permits N-7265-35 and '-36. [District Rule 2201]
- The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201]

[5] For ease of identifying the proposed changes, the existing DEL conditions that were modified have the proposed language underlined.

- Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.003 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64]

N-7365-5

- The VOC content of the vapor in the slurry tank and slurry mix tank shall not exceed 10% by weight. [District Rule 2201]

N-7365-6

- Fugitive VOC emissions from equipment leaks associated with the liquefaction tank shall not exceed 0.6 lb/day. [District Rule 2201]

N-7365-7

- The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201]
- All vapors from the fermentation tanks shall be vented through the CO2 scrubber and then through the RTO or power oxidizer(s) listed on permits N-7265-35 and '-36. [District Rule 2201]
- The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- The overall control efficiency for the CO2 scrubber vented to the RTO and CO2 scrubber vented power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201]

- Total combined controlled VOC emissions rate from each fermentation tank served by the CO2 scrubber vented to the RTO and from each fermentation tank served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Total combined controlled VOC emissions rate from the entire fermentation process served by the CO2 scrubber vented to the RTO and from the entire fermentation process served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Total combined controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO and from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.003 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64]
- Fugitive VOC emissions from equipment leaks associated with the fermentation process shall not exceed 3.8 lb/day. [District Rule 2201]
- VOC content in the fluid handled through the chiller system (shared with permit N-7365-8) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201 and 4455 and 40 CFR 60.480a (d)(5)]

N-7365-8

- The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201]
- All vapors from the beerwell process tank shall be vented through the CO2 scrubber and then through the RTO or power oxidizer(s) listed on permits N-7265-35 and '-36. [District Rule 2201]
- The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- The overall control efficiency for the CO2 scrubber vented to the RTO and the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201]
- Total combined controlled VOC emissions rate from the beerwell process tank served by the CO2 scrubber vented to the RTO and from the beerwell process tank

served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]

- Total combined controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO and from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Total controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201]
- Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.003 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64]
- Fugitive VOC emissions from equipment leaks associated with the beerwell process tank shall not exceed 0.6 lb/day. [District Rule 2201]
- VOC content in the fluid handled through the chiller system (shared with permit N-7365-7) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201 and 4455 and 40 CFR 60.480a (d)(5)]

N-7365-9

- Fugitive VOC emissions from equipment leaks associated with the distillation process shall not exceed 3.9 lb/day. [District Rule 2201]

N-7365-10

- Fugitive VOC emissions from equipment leaks associated with this process condensate tank shall not exceed 0.2 lb/day. [District Rule 2201]

N-7365-11

- Wet cake conveyors between each tank or each emissions unit at the wet cake process unit shall be fully enclosed. [District Rule 2201]
- Loading losses from the distiller's syrup loadout operation shall not exceed 0.526 lb-VOC/1,000 gallons. [District Rule 2201]

- Loading losses from the distiller's corn oil loadout operation shall not exceed 0.000175 lb-VOC/1,000 gallons. [District Rule 2201]
- The maximum throughput of distiller's syrup loaded shall not exceed any of the following: 67,371 gallons per day or 24,590,415 gallons per year. [District Rule 2201]
- The maximum throughput of corn oil loaded shall not exceed any of the following: 26,000 gallons per day or 5,000,000 gallons per year. [District Rule 2201]
- Fugitive VOC emissions from equipment leaks associated with the wet cake process shall not exceed 2.5 lb/day. [District Rule 2201]
- Fugitive VOC emissions from equipment leaks associated with the corn oil operation shall not exceed 0.03 lb/day. [District Rule 2201]
- Fugitive VOC emissions from equipment leaks associated with the distiller's syrup operation shall not exceed 2.9 lb/day. [District Rule 2201]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64]

N-7365-20, '-21 and '-22 (Boilers)

- The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201 and 40 CFR 60.45c(c) and 60.47c(c)]
- Emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu; 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O2); 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rules 2201, 4305, 4306, and 4320 and 40 CFR 60.43c(e)(2), 60.45c(c) and 60.47c(c)]

  Additionally, the following annual limit is included on the existing boiler PTOs and will be included on the proposed ATCs:

- The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201]

N-7265-35 and '-36 (Power Oxidizers)

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of waste gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
- The unit shall only be fired on PUC-regulated natural gas or a mixture of PUC-regulated natural gas and waste gas from the ethanol production operations listed under permits N-7365-4, through '-11. [District Rule 2201]

- The maximum heat input, including startup, shall be limited to 620 MMBtu/day and 219,020 MMBtu/year (equivalent to 0.62 MMscf/day and 219.02 MMscf/year of natural gas). [District Rule 2201]
- The overall control efficiency for the scrubbers listed under permits N-7365-4, through '-11 vented to the power oxidizer shall be a minimum of 99.5% for VOC emissions. [District Rule 2201]
- Emissions rates from combustion in the power oxidizer shall not exceed any of the following limits: 0.0062 lb-NOx/MMBtu (0.8 ppmv @ 15% O2); 0.0226 lb-CO/MMBtu (4.8 ppmv @ 15% O2); 0.003 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
- Emission rate from the combustion of natural gas in the power oxidizer shall not exceed 0.0055 lb-VOC/MMBtu (4.3 ppmv @ 15% O2). [District Rule 2201]
- The power oxidizer shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]

All Units

Also, the applicant is proposing a combined annual emissions limit; therefore the following condition will be included on the proposed ATCs:

- The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201]

E. Compliance Assurance

1. Source Testing

N-7365-4 to '-11, '-20, '-21 and '-22

For the existing emissions units and control devices, no additional source testing is required and all existing requirements will be replicated in the permits being issued under this project.

N-7365-4 to '-11

For the emissions units served by the existing RTO, the following condition will be included on the ATCs since the proposed power oxidizers will be the primary control devices:

- Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during

the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201]

N-7265-35 and '-36 (Power Oxidizers)

In order to verify compliance with the 99.5% overall control efficiency of the entire system when venting to the proposed power oxidizers (ATCs N-7365-35-0 and '-36-0) and to verify compliance with the NOx and CO emission limits, source testing will be required within 90 days of initial start-up and at least once every 12 months thereafter per District Policy APR 1705, Source Testing Frequency.

Source testing to verify compliance with the overall VOC emissions rate from the exhaust of each power oxidizer will also be required within 90 days of initial start-up and at least once every 12 months thereafter, similarly to what is required of the existing RTO.

The following conditions will be included on these ATCs to ensure compliance with the VOC source testing requirements:

- Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201]

- Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO_2 Scrubber Inlet + Vent Gas Scrubber Inlet) – Power Oxidizer Outlet] / [CO_2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201]

- Source testing to measure NOx and CO emissions from this unit shall be conducted within 90 days of initial start-up and at least once every twelve (12) months thereafter. [District Rule 2201]

- Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201]

- Source testing for NOx emissions shall be conducted using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input

basis. [District Rules 1080 and 2201]

- CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100 [District Rules 1080 and 2201]

- Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 1080 and 2201]

- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

- During source testing, permittee shall maintain records of the ethanol production rate, measured in gal-ethanol/hour. [District Rules 1070 and 2201]

- The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

2. Monitoring

N-7365-4 to '-11, '-20, '-21 and '-22

For the existing emissions units and control devices, no additional source testing is required and all existing requirements will be replicated in the permits being issued under this project.

N-7365-35 and '-36 (Power Oxidizers):

Since these units are serving processes that are required by Rule 2201 (BACT) to maintain a minimum control efficiency, monitoring will be required to ensure compliance with BACT. Additionally, these monitoring requirements satisfy 40 CFR Part 64, Compliance Assurance Monitoring (CAM) as further explained in the 40 CFR Part 64, Compliance Assurance Monitoring (CAM) section below. Typically, the District has assumed that an power oxidizer operates with a minimum control efficiency of 98% for VOC emissions. The District has also typically assumed that a thermal power oxidizer is in compliance with the 98% control efficiency for VOC emissions if its operating temperature is maintained at or above 1,400 °F.

The power oxidizers will also be equipped with a continuous temperature monitor and recorder. To ensure proper operation of the power oxidizers, permit conditions will be listed as follows:

- The power oxidizer shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64]

- The power oxidizer shall be equipped with a continuous temperature monitoring and recording device, and shall be in operation at all times. [District Rule 2201 and 40 CFR Part 64]

3. Recordkeeping

N-7365-4 to '-11, '-20, '-21 and '-22

For the existing emissions units and control devices, no additional recordkeeping is required and all existing requirements will be replicated in the permits being issued under this project.

N-7365-4 to '-11

For the emissions units served by the existing RTO, the following condition will be included on the ATCs:

- Monthly hours of operation of the RTO shall be maintained. [District Rule 2201]

N-7365-35 and '-36 (Power Oxidizers):

The following conditions will be included on the ATCs to ensure compliance:

- The owner or operator shall maintain an operating log that includes, on a daily basis, total heat input (in either MMBtu or MMscf), date of power oxidizer temperature measurements, temperature at the time of measure and a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64]

- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64]

Since a combined annual emissions limit from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) is being established, the following condition will be included on all ATCs to ensure compliance:

- Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]

- Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: PE = combined rolling 12 month heat input from boilers (MMBtu) x 0.0013 lb/MMBtu (or emission factor established by most recent source test) + rolling 12 month ethanol production (1,000 gal) x 0.0653 lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test). [District Rule 2201][6]

4. Reporting

No reporting requirements are required to demonstrate compliance with District Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix VI of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source

[6] 0.0653 lb/1,000 gal-ethanol produced is calculated as follows: to ensure there is no increase in VOC emissions in this project due to the proposed power oxidizers, units '-35 and '-36, PE1 = PE2.
PE1 = 6,379 lb-VOC/yr = 1,811 lb-VOC/yr (from units '-20, '-21, '-22) + 116 lb-VOC/yr (from RTO of units -4, '-5, '-6, '-7, '-8, '-9, '-10, '-11) + 4,452 lb-VOC/yr (from ethanol production) where all values were calculated in Section VII.C.2 and summarized in the SSPE2 table of Section VII.C.4. Therefore, the combined amount of emissions allowed by the power oxidizers and RTO = 6,379 lb-VOC/yr - 1,811 lb-VOC/yr = 4,568 lb-VOC/yr.
0.0653 lb/1,000 gal-ethanol produced = 4,568 lb-VOC/yr / 70,000,000 gal throughput limit

and this project does constitute a Title I modification, therefore this requirement is applicable. PES's statewide compliance certification is included in Appendix IV.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a power oxidizer driving a turbine to produce electricity and equipped with a Heat Recovery Steam Generator.

Since the project will provide control of emissions, electricity and steam to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII. C. 9. above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Sources Performance Standards

N-7365-6, '-7, '-8,'-9, '-10, '-11

40 CFR Part 60, Subpart VVa: Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Pursuant to Section 60.480a(a), the provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry for which construction, reconstruction, or modification occurs after November 7, 2006.

The facility is currently operating in compliance with the subpart and the project is not expected to affect the compliance status. The ATCs and PTO include the appropriate conditions ensuring continuing compliance.

N-7365-20, '-21, '-22

40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Pursuant to Section 60.40(c), the requirements of 40 CFR Part 60 Subpart Dc apply to steam generating units for which construction, modification, or reconstruction is commenced after June 9, 1989 with a maximum heat input of greater than 10 MMBtu/hr but no more than 100 MMBtu/hr. These three 75.6 MMBtu/hr boilers were installed after this date. Therefore, these boiler are subject to the requirements of this subpart.

The facility is currently operating in compliance with the subpart and the project is not expected to affect compliance status. The ATCs and PTO include the appropriate conditions ensuring continuing compliance.

N-7365-35, '-36

40 CFR Part 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

Pursuant to Section 60.330(a), the provisions of this subpart apply to the following affected facilities: All stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired.

Section 60.4420 lists the definitions that apply to this subpart and defines a stationary combustion turbine as "all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

The section also has the following definitions:

Combined cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine.

Combined heat and power combustion turbine means any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose.

Regenerative cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine.

Simple cycle combustion turbine means any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself.

All classifications of turbines are based on what function the exhaust gases of the turbine serve. Since the exhaust gases of the proposed units are from the power oxidizers and not the turbines, the turbines can be considered unfired (having no exhaust gases or emissions themselves) and not combustion turbines; therefore, the proposed turbines are not subject to this subpart.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

40 CFR 63 – Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

Section 63.6080 states Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations.

Section 63.6085 states you are subject to this subpart if you own or operate a stationary combustion turbine located at a major source of HAP emissions.

(a) Stationary combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, the combustion turbine portion of any stationary cogeneration cycle combustion system, or the combustion turbine portion of any stationary combined cycle steam/electric generating system. Stationary means that the combustion turbine is not self

propelled or intended to be propelled while performing its function, although it may be mounted on a vehicle for portability or transportability. Stationary combustion turbines covered by this subpart include simple cycle stationary combustion turbines, regenerative/recuperative cycle stationary combustion turbines, cogeneration cycle stationary combustion turbines, and combined cycle stationary combustion turbines. Stationary combustion turbines subject to this subpart do not include turbines located at a research or laboratory facility, if research is conducted on the turbine itself and the turbine is not being used to power other applications at the research or laboratory facility.

(b) A major source of HAP emissions is a contiguous site under common control that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

As explained above under Rule 4001, 40 CFR Part 60 Subpart GG, the proposed units are not stationary combustion turbines, additionally, this stationary source has the potential to emit of any single HAP less than 10 tons per year and combination of HAPs less than 25 tons per year. Therefore, the requirements of this subpart are not applicable to this project.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the units are fired on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix VI), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-7365-35-0 & '-36-0	0.000468 per million	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix VI of this report, the emissions increases for this project was determined to be less than significant.

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]

Compliance is expected with this Rule.

Rule 4201 Particulate Matter Concentration

The only PM_{10} emissions from these operations is from the combustion of natural gas and waste gas in the RTO and power oxidizers and natural gas in the boilers. Therefore:

F-Factor for NG:	8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor:	0.0076 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust:	100%
Exhaust Oxygen (O_2) Concentration:	3%

$$\text{Excess Air Correction to F Factor} = \frac{20.9}{(20.9 - 3)} = 1.17$$

$$GL = \left(\frac{0.0076\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{8{,}578\ dscf}{MMBtu} \times 1.17 \right)$$

Therefore, for each permit unit:

$$GL = 0.0053\ grain/dscf < 0.1\ grain/dscf$$

Therefore, compliance with District Rule 4201 requirements is expected.

Conclusion:

Therefore, compliance with District Rule 4201 requirements is expected. The following condition will be included on each of these ATC's and PTO's to ensure continued compliance with the requirements of this rule:

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to $\leq$ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter. As shown below, the unit's maximum hourly emission rates are below the Rule 4301 limits.

District Rule 4301 Limits (lb/hr)			
Unit	**NO_2**	**Total PM**	**SO_2**
N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 (processes served by the RTO/power oxidizers)	0.1	0.01	0.01
N-7365-20, '-21 and '-22	0.6	0.2	0.2
N-7365-35 and '-36	0.2	0.1	0.1
Rule 4301 Limit	**140 lb/hr**	**10 lb/hr**	**200 lb/hr**

As shown above, compliance with this rule is expected.

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

The purpose of District Rule 4320 is to limit NOx, CO, SOx and PM10 from boilers, steam generators, and process heaters. Pursuant to Section 2.0 of District Rule 4320, boilers N-7365-20, '-21, '-22 are subject to Rule 4320.

The facility is currently operating in compliance with the Rule and the project is not expected to affect compliance status. The ATCs and PTO include the appropriate conditions ensuring continuing compliance.

Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing, Facilities, and Chemical Plants

The purpose of District Rule 4455 is to limit VOC emissions from leaking components at petroleum refineries, gas liquids processing facilities, and chemical plants.

PES is not a petroleum refinery or a gas liquids processing facility. Pursuant Section 3.4, a chemical plant is defined as an establishment that produces organic chemicals and/or manufactures products by organic chemical processes. The company produces ethanol by fermenting sugars in the corn using yeast, which can be considered an organic chemical process. Therefore, this facility meets the definition of a chemical plant and is subject to the requirements of this Rule.

Per Section 2.4, this rule shall apply to components containing or contacting VOC at petroleum refineries, gas liquids processing facilities, and chemical plants. For this ethanol production facility, this rule applies to all of the equipment or piping systems that contains or come in contact with, VOC's. It will be assumed that all or part of the following processes have components containing or contacting VOC's during the ethanol production process.

- N-7365-5: Yeast Tank
- N-7365-6: Liquefaction Tank
- N-7365-9: Distillation Process
- N-7365-10: Process Condensate Tank
- N-7365-11: Wet Cake Process

Therefore, the requirements of District Rule 4455 will be applicable to those components associated with these processes.

Each permit contains the following condition which will be included on the ATCs to ensure continued compliance:

- This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455]

To ensure exemption from this rule the following conditions included on ATC N-7365-4-4 in Project N-1143242 will also be included on ATC N-7365-4-7:

- The VOC content of the vapor in the slurry tank and slurry mix tank shall not exceed 10% by weight. [District Rules 2201 and 4455]
- Operator shall conduct initial sampling from the slurry mix tank to qualify for exemption from fugitive component counts for components handling fluids with less than 10% VOC by weight. [District Rule 2201]

- VOC content of vapor shall be determined by ASTM D1945, ASTM D1946, EPA Method 18 referenced as methane, or equivalent test method with prior District approval. [District Rule 2201]

To ensure exemption from this rule the following conditions taken from the current permits will be included on ATC N-7365-7-6, '-8-7:

- VOC content in the fluid handled through the chiller system (shared with permit N-7365-7 or '-8) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201 and 4455 and 40 CFR 60.480a (d)(5)]
- The owner or operator shall keep records of the following items for VOC content testing: a.) the date, b.) vessel or location from where fluid is sampled, c.) name of the person taking and analyzing samples and company affiliation, d.) VOC content (% by wt.) in the sample, and e.) report of the test results. [District Rules 2201 and 4455 and 40 CFR 60.486a (i)(3)]
- The permittee shall include in the Operator Management Plan all components exclusively handling liquid streams with VOC content less than 10% by weight. [District Rule 4455]
- The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components exclusively handling liquid streams with VOC content less than 10% by weight shall be submitted with the Operator Management Plan. [District Rule 4455]
- VOC content shall be determined using South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids, or EPA Method 8260B, or other alterative test methods approved by the District prior to their use. [District Rules 2201 and 4455]

In order to lower the fugitive VOC emissions from this facility, PES has proposed a maximum leak limit of 100 ppmv above background for valves and connectors and 500 ppmv above background for pumps and compressors when measured at a distance of one (1) cm from the potential source.

Section 5.0 sets forth the operating requirements for components that are not specifically exempted from the requirements of this rule in accordance with Sections 4.1 and 4.2. The following condition is included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- The operator shall meet operating, inspection and re-inspection, maintenance, process pressure relief device (PRD) and component identification requirements of District Rule 4455 (4/20/05) for all components containing or contacting VOC, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455, 5.0]

Section 5.1 requires that a facility operator shall not use any component that leaks in excess of the applicable leak standards of this rule. A leaking component can be put back

into service if it has been identified with a tag for repair, is repaired, or is awaiting re-inspection after being repaired in a timely manner.

Section 5.1.2 applies directly to operation of hatches.

Sections 5.1.3 identifies how to determine compliance with leak standards of the rule.

Section 5.1.4 provides leak standards for all applicable components.

The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- The operator shall not use any component that leaks in excess of the allowable leak standards, except as follows. A component identified as leaking in excess of an allowable leak standard may be used provided it has been identified with a tag for repair, has been repaired, or is awaiting re-inspection after repair, within the applicable time period specified within the rule. [District Rule 4455, 5.1.1]
- Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4455, 5.1.2]
- A component shall be considered leaking if one of more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of the rule exist at the facility. [District Rule 4455, 5.1.4 and 40 CFR 60.482-4(a)]

The following conditions are also included on permits N-7365-5, '-6, '-8, '-9, '-10 and '-11; therefore, continued compliance with the requirements is expected:

- Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4]
- Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4]
- Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4]
- Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not

leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4]

Section 5.2 requires equipment to be inspected and re-inspected for leak detection and leaking equipment identification. The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- The operator shall audio-visually inspect for leaks all accessible operating pumps, compressors and PRD in service at least once every 24 hours, except when operators do not report to the facility for that given 24 hours. Any identified leak that cannot be immediately repaired shall be reinspected within 24 hours using EPA Method 21. If a leak is found, it shall be repaired as soon as practical but not later than the time frame specified in Table 3 of the rule. [District Rule 4455, 5.2.1 & 5.2.2; 40 CFR 60.482-2(a), (b) and (c); 40 CFR 60.482-7(d) and (e)]
- The operator shall inspect all components at least once every calendar quarter. New, replaced, or repaired fittings, flanges and threaded connections shall be inspected immediately after being placed into service. Inaccessible components, unsafe-to-monitor components and pipes shall be inspected in accordance with the requirements set forth in Sections 5.2.5 through 5.2.7. Components shall be inspected using EPA Method 21. [District Rule 4455, 5.2.3, 5.2.4, 5.25, 5.26 & 5.27; 40 CFR 60.482-2(a), (b) and (g); 40 CFR 60.482-7(a), (b), (g) and (h)]
- The operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, provided the operator meets all the criteria specified in Sections 5.2.8.1 through 5.2.8.3 of the rule. This approval shall apply to accessible component types, specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis. [District Rule 4455, 5.2.8; 40 CFR 60.482-7]
- An annual inspection frequency approved by the APCO shall revert to quarterly inspection frequency for a component type if either the operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2 and 5.3 of the rule exists for that component type, or the APCO issued a Notice of Violation for violating any of the provisions of this rule during the annual inspection period for that component type. When the inspection frequency changes from annual to quarterly inspections, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency, giving the reason(s) and date of change to quarterly inspection frequency. [District Rule 4455, 5.2.9 & 5.2.10]
- The operator shall initially inspect a process PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the time of the release. To insure that the process PRD is operating properly, and is leak-free, the operator shall re-inspect the process PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the date of the release using EPA Method 21. If the process PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections. [District Rule 4455, 5.2.11 and 40 CFR 60.482-4(b)]

- Except for process PRD, a component shall be inspected within 15 calendar days after repairing the leak or replacing the component using EPA Method 21. [District Rule 4455, 5.2.12]

Section 5.3 requires leaking equipment to be tagged and requires repair or replacement upon a schedule based on the leak rate. The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag. The tag shall remain affixed to the component until the leaking component has been repaired or replaced; has been re-inspected using EPA Method 21; and is found to be in compliance with the requirements of this rule. [District Rule 4455, 5.3.1 & 5.3.2; 40 CFR 60.486(b)]
- The tag shall include date and time of leak detection, date and time of leak measurement, indicate the leak concentration in ppmv (gas leaks), indicate whether it is a major or a minor leak (liquid leaks) and whether the leaking component is an essential component, unsafe-to-monitor component or critical component. [District Rule 4455, 5.3.3]
- All component leaks shall be immediately minimized to the extent possible, but not later than one (1) hour after detection of leaks, in order to stop or reduce leakage to the atmosphere. As soon as practicable but not later than the time period specified in Table 3 of the rule, components that have been identified as leaking and have had emissions minimized to the extent possible but do not meet the applicable leak standards of the rule shall either be: 1) repaired or replaced, or 2) vented to a closed vent system, or 3) removed from operation. [District Rule 4455, 5.3.5]
- For any leaking component that is an essential or critical component, and which cannot be immediately shut down for repairs, the operator shall minimize the leak within one hour after detection of the leak. If the leak has been minimized but still exceeds any of the applicable leak standards of this rule, the operator shall repair or replace the component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4455, 5.3.6]
- For any component that has incurred five repair actions for major gas leaks or major liquid leaks (any combination) within a continuous 12-month period, the operator shall as soon as practicable but not later than 12 after the date of detection either: 1) replace or retrofit the component with the control technology specified in Table 4 of the rule, or 2) replace the component with Best Available Control Technology (BACT) equipment, as approved by the APCO, or 3) vent the component to an APCO approved closed vent system as defined in Section 3.0 of the rule, or 4) remove the component from operation. Inaccessible components, unsafe-to-monitor components, essential components, or critical components shall satisfy the above-listed requirement as soon as practicable but not later than the next turnaround or not later than two (2) years after the date of detection of the fifth major leak within a continuous 12-month period, whichever comes earlier. The APCO shall be notified in writing prior to the replacement or retrofitting of any component. [District Rule 4455, 5.3.7]

Section 5.4 provides specific performance requirements for process pressure relief devices. The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- The operator shall monitor process PRD by using electronic process control instrumentation that allows for real time continuous parameter monitoring or by using telltale indicators for the process PRD where parameter monitoring is not feasible. [District Rule 4455, 5.4.1]
- The operator shall comply with the process PRD release notification and record keeping requirements specified in Section 6.3 of the rule. After a release from process PRD in excess of 500 pounds of VOC in a continuous 24-hour period, the operator shall immediately conduct a failure analysis and implement corrective actions as soon as practicable but not later than 30 days to prevent the reoccurrence of similar release. [District Rule 4455, 5.4.3 & 5.4.4]

Section 5.5 requires clear and visible physical identification of major and critical components. The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and record keeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other APCO-approved system that enables an operator or District personnel to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery. [District Rule 4455, 5.5]

Section 6 details the administrative and record keeping requirements, including the operation management plan, inspection log, process pressure lease device release notification, and test methods.

The operator management plan (OMP) required by section 6.1 must be submitted to the District for review. The District must respond with written notice of approval or incompleteness within 60 days of receiving the plan.

The following conditions are included on the facility-wide permit, -0-1; therefore, continued compliance with the requirements is expected:

- The operator shall keep a copy of the OMP at the facility and make it available to the APCO, ARB and US EPA upon request. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved Operator Management Plan. [District Rule 4455, 6.1.2]

- Operator shall maintain an inspection log containing the information set forth in Sections 6.2.1.1 through 6.2.1.10 of the rule. [District Rule 4455, 6.2.1; 40 CFR 60.486(c)]
- The operator shall notify the APCO, by telephone or other APCO-approved methods, of any process PRD release in excess of 500 pounds of VOC in a continuous 24-hour period, and any release in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one hour of such occurrence or within one hour of the time said person knew or reasonably should have known of its occurrence. The operator shall submit a written report to the APCO within thirty (30) calendar days of following notification of process PRD release subject to 6.3.1 of the rule. The written report shall include all of the information set forth in Sections 6.3.2.1 through 6.3.2.5 of the rule. [District Rule 4455, 6.3]
- Measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument, calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. Operator shall keep a record of each instrument calibration in accordance with requirements as set forth Section 6.2.3 of the rule. [District Rule 4455, 6.4; 40 CFR 60.485(b)]

Rule 4623 Storage of Organic Liquids

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids.

Per Section 2.4, this rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

All of the process tanks and storage tanks operated PES hold, stored or have organic liquid placed in them at some point during the ethanol production process. Therefore, the requirements of this rule are applicable to the following processes:

- N-7365-4: Slurry Tank
- N-7365-5: Yeast Tank
- N-7365-6: Liquefaction Tank
- N-7365-8: Beerwell Tank
- N-7365-10: Process Condensate Tank

Pursuant to information provided by Phoenix Bio Industries, a similar ethanol production plant, under project S-1062253, the True Vapor Pressure (TVP) of the organic liquids processed through these tanks is greater than 0.5 psia. Therefore, these fixed roof process tanks are subject to the requirements of this rule.

Section 5.1, Requirements: VOC Control System Requirements

District Rule 4623 Section 5.1 requires that, except for small producers who are required to comply with the VOC control system requirements in Section 5.1.2, an operator shall not place, hold, or store organic liquid in any tank unless such tank is equipped with a VOC control system identified in Table 1. The specifications for the VOC control system are described in Sections 5.2, 5.3, 5.4, 5.5, and 5.6.

District Rule 4623 Section 5.1.1 identifies VOC control systems required for organic liquids storage tanks.

Tank Design Capacity (TDC) (gallon)	**True Vapor Pressure (TVP) of Organic Liquid**		
	0.5 < TVP (psia) <1.5	**1.5 < TVP (psia) <11**	**11 < TVP (psia)**
1,100 ≤ TDC ≤ 19,800	Pressure Vacuum Relief Valve, Or Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Pressure Vacuum Relief Valve, Or Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Pressure Vessel, Or Vapor Recovery System
19,800 < TDC ≤ 39,600	Pressure Vacuum Relief Valve, Or Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Pressure Vessel, Or Vapor Recovery System
39,600 < TDC	Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Pressure Vessel, Or Vapor Recovery System

PES is proposing to vent each of these fixed roof organic liquid process tanks with to a control device with a minimum control efficiency of 95% for VOC emissions. Therefore, each tank meets the VOC control system requirements of this section.

Section 5.6, Specifications for Vapor Recovery Systems

Pursuant to Section 5.6.1, fixed roof tanks shall be fully enclosed and shall be maintained in a leak-free condition. Leak-free is defined as no leaks in excess of 10,000 ppmv VOC. Pacific Ethanol Stockton is proposing no leaks greater than 500 ppm for any components associated with this facility. An APCO-approved vapor recovery system shall consist of a closed vent system that collects all VOC's from the storage tanks and VOC control device.

The VOC control device shall be a VOC destruction device that reduces the inlet VOC emissions by at least 95 percent by weight as determined by the test method specified in Section 6.4.7 and the following condition taken from the current permits will be included on the ATCs to ensure continued compliance with requirements of Section 5.6.1:

- Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]

Pursuant to Section 5.6.2, any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling and the following condition taken from the current permits will be included on the ATCs to ensure continued compliance with requirements of Section 5.6.1, will be listed on each permit as follows:

- Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]

Pursuant to Section 5.6.3, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition and the following condition taken from the current permits will be included on the ATCs to ensure continued compliance with requirements of Section 5.6.1, will be listed on each permit as follows:

- Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623]

Section 6.2, Administrative Requirements: TVP and API Gravity Testing of Stored Organic Liquid in Uncontrolled Fixed Roof Tanks

Since the tanks are controlled fixed roof tanks, the requirements of Section 6.2 do not apply.

Section 6.3, Administrative Requirements: Recordkeeping

Pursuant to Section 6.3.1, an operator whose tanks are subject to the requirements of this rule shall keep an accurate record of each organic liquid stored in each tank, including its storage temperature, TVP, and API gravity. However, this requirement shall not apply to fixed tanks equipped with a vapor recovery system that meet the requirements of this rule.

Therefore, no records need to be kept for the fixed roof process tanks.

Rule 4703 Stationary Gas Turbines

Rule 4703 limits NOx and CO emissions from stationary gas turbines with ratings of greater than 0.3 megawatts and/or maximum heat input ratings of more than 3,000,000 Btu/hr.

Gas turbine is defined in the Rule as an internal combustion engine consisting of a compressor, a combustor, and a power turbine, that is gas and/or liquid fueled, with or without power augmentation. Two or more gas turbines powering one shaft shall be treated as one gas turbine. Since the turbines proposed in this project are un-fired or external-fired, this rule does not apply and no further discussion is required.

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

Volume $SO_2 = \frac{n\,RT}{P}$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$
EPA F-Factor for Natural Gas: 8,578 dscf/MMBtu at 60°F, equivalent to

$$\frac{0.00285\,lb-SOx}{MMBtu}\times\frac{MMBtu}{8{,}578\,dscf}\times\frac{1\,lb\cdot mol}{64\,lb}\times\frac{10.73\,psi\cdot ft^3}{lb\cdot mol\cdot{}^\circ R}\times\frac{520{}^\circ R}{14.7\,psi}\times\frac{1{,}000{,}000\cdot parts}{million}=1.97\,\frac{parts}{million}$$

$SulfurConcentration = 1.97\frac{parts}{million}$ < 2,000 ppmv (or 0.2%),

Therefore compliance with District Rule 4801 requirements is expected.

40 CFR Part 64, Compliance Assurance Monitoring (CAM)

Pursuant to Section 64.5(a)(2), the owner or operator shall submit the required information as part of a significant permit revision under Part 70 or 71 of this chapter. Since this project is a Significant Title V Modification, this subpart will be addressed.

Except for back-up utility units that are exempt under paragraph (b)(2), Section 64.2 states that the requirements of this subpart shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a Part 70 or 71 permit if the unit satisfies all of the following criteria:

1) the unit must have an emission limit for the pollutant;
2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, catalytic oxidizers, etc; and
3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

Pollutant	Major Source Threshold (lb/year)
VOC	20,000
NO_X	20,000
CO	200,000
PM_{10}	140,000
SO_X	140,000

N-7365-4, '-5, '-6, -'9, '-10, '-11

This permit may be subject to CAM for VOC, as there is a VOC limit, and it does have an add-on control in the form of a gas scrubber and a RTO or power oxidizers.

Ethanol Production Emissions

(1) VOC emissions are limited to 0.01161 lb-VOC/10^3 gallon ethanol produced.

(2) The units are equipped with thermal oxidizer with 99.5% (Per current permit).

(3) Uncontrolled emissions:

Annual Uncontrolled PE = [0.00995 lb-VOC/10^3 gallon ethanol produced x 70,000,000 gallon ethanol produced/year ÷ (1-0.995)]

Annual Uncontrolled PE = 139,300 lb-VOC/year

Annual Controlled PE = 697 lb-PM10/year

As shown above, the uncontrolled PE for VOC is more than the major source threshold of 20,000 lb/year. Therefore, this unit does trigger CAM.

Since the post-control annual emissions do not exceed the Major Source threshold for VOC of 20,000 lb/year, a once-daily monitoring interval is sufficient to determine compliance with CAM. CAM is satisfied for this unit by monitoring the temperature in the RTO and each power oxidizer and the water flow through the vent gas scrubber.

The following conditions taken from the current permits will be included on the ATCs to ensure compliance:

- The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64]
- The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64]
- If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64]
- The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64]
- Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64]
- The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64]
- The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64]

N-7365-7, '-8

This permit may be subject to CAM for VOC, as there is a VOC limit, and it does have an add-on control in the form of a CO2 scrubber and a RTO or power oxidizers.

Ethanol Production Emissions

(1) VOC emissions are limited to 0.05365 lb-VOC/10^3 gallon ethanol produced.

(2) The units are equipped with thermal oxidizer with 99.5% (Per current permit).

(3) Uncontrolled emissions:

Annual Uncontrolled PE = [0.05365 lb-VOC/10^3 gallon ethanol produced x 70,000,000 gallon ethanol produced/year ÷ (1-0.995)]

Annual Uncontrolled PE = 751,100 lb-VOC/year

Annual Controlled PE = 3,756 lb-PM10/year

As shown above, the uncontrolled PE for VOC is more than the major source threshold of 20,000 lb/year. Therefore, this unit does trigger CAM.

Since the post-control annual emissions do not exceed the Major Source threshold for VOC of 20,000 lb/year, a once-daily monitoring interval is sufficient to determine compliance with CAM. CAM is satisfied for this unit by monitoring the temperature in the RTO and each power oxidizer and the water flow through the CO2 scrubber. The following conditions taken from the current permits will be included on the ATCs to ensure compliance:

- The CO2 scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64]. [District Rule 2201 and 40 CFR Part 64]
- The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64]
- The permittee shall monitor and record the water flow rate through the CO2 scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64]
- If the water flow rate through the CO2 scrubber is less than 33 gal/minute, the permittee shall correct the water flow rate to exceed 33 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the CO2 scrubber continues to be less than 33 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64]
- The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the CO2 scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 33 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]
- The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64]
- The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64]
- Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize

excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64]

- The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64]
- The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64]

N-7365-20, '-21, '-22

These permits may be subject to CAM for NO_X, as there is a NO_X limit, and they do have add-on controls in the form of FGR. However, as shown below, the pre-control potential to emit is not greater than the major source threshold of 20,000 pounds NO_X/year. Therefore, these permit units are not subject to CAM

The control efficiency for FGR was determined using the following AP-42 emission factors from Table 1.4.1 (7/98) for small boilers < 100 MMBtu/hr.

	Emission Factor ($lb/10^6$ scf)
Uncontrolled	100
Controlled – low NOx burner	50
Controlled Low NOx burner and Flue Gas Recirculation	32

The control efficiency of FGR is,

100 x (50 lb/106 scf – 32 lb/106 scf) ÷ 50 lb/106 scf = 36%

The emission factor for these units is limited by Rule 4320 to 7 ppmv @ 3% O2 or 0.008 lb-MMBtu/hr. The maximum rating for these units is 75.6 MMBtu/hr.

$Emission\ Factor_{Precontrolled}$ = Controlled EF/(1 – Control Efficiency)
= (0.008 lb-NOX/MMBtu)/(1 – 0.36)
= 0.0125 lb-NOX/MMBtu

$PE_{Precontrolled}$ = Heat Input/yr x $Emission\ Factor_{Precontrolled}$
= 0.0125 lb-NO_X/MMBtu x 75.6 MMBtu/hr x 8760 hr/yr
= 8,278 lb-NO_X/yr

As shown above, the uncontrolled PE for NO_X is less than the major source threshold of 20,000 lb/year. Therefore, these units do not trigger CAM.

N-7365-35, '-36

These units are not subject to CAM as they are not equipped with an add-on control device; however, to satisfy the CAM requirements of temperature monitoring for units N-

7365-4, '-5, '-6, '-7, '-8, -'9, '-10, '-11, temperature monitoring conditions will be included on the draft ATCs as follows:

- The power oxidizer shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Y
- The power oxidizer shall be equipped with a continuous temperature monitoring and recording device, and shall be in operation at all times. [District Rule 2201 and 40 CFR Part 64]
- The owner or operator shall maintain an operating log that includes, on a daily basis, total heat input (in either MMBtu or MMscf), date of power oxidizer temperature measurements, temperature at the time of measure and a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64]
- Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64]
- The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64]
- All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64]
- If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64]
- The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64]

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has prepared or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency,* for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation*, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying project complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

Industries covered by Cap-and-Trade are identified in the regulation under section 95811, Covered Entities:

1. Group 1: Large industrial facilities

   These types of facilities are subject to Cap and Trade, and the specific companies covered are listed at

http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm, Section 95811 (a), under the "Publically Available Market Information" section (list maintained by the California Air Resources Board).

2. Group 2: Electricity generation facilities located in California, or electricity importers

   These types of facilities are subject to Cap and Trade (section 95811, b).

3. Group 3: Suppliers of Natural Gas, Suppliers of Reformulated Gasoline Blendstock for Oxygenate Blending and Distillate Fuel Oil, Suppliers of Liquefied Petroleum Gas, and Suppliers of Blended Fuels

   These entities are subject to Cap and Trade compliance obligations which must cover all fuels (except jet fuels) identified in section 95811 (c) through (f) of the Cap-and-Trade regulation delivered to end users in California, less the fuel delivered to covered entities (group 1 above).

This facility is subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the proposed increase in emissions is less than significant, and there is minimal potential for public concern for this particular facility. Therefore, an Indemnification Agreement and Letter of Credit are not required for this project.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period and EPA commenting period, issue ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0 subject to the permit conditions on the attached draft ATC in Appendix VII.

X. BILLING INFORMATION

Permit Number	Fee Schedule	Fee Description	Annual Fee
N-7365-4	3020-02-E	2.4 MMBtu/hr	$432
N-7365-5	3020-05-C	29,653 gallons	142
N-7365-6	3020-05-E	177,748 gallons	258
N-7365-7	3020-05-G	4 x 750,000 gallons	401
N-7365-8	3020-05-F	928,526 gallons	316
N-7365-9	3020-01-F	555 total electric hp	637
N-7365-10	3020-05-E	190,400 gallons	258
N-7365-11	3020-01-F	600 total electric hp	637
N-7365-20	3020-02-H	75.6 MMBtu/hr	1080
N-7365-21	3020-02-H	75.6 MMBtu/hr	1080
N-7365-22	3020-02-H	75.6 MMBtu/hr	1080
N-7365-35	3020-028A-C	2,000 kW*	1607
N-7365-36	3020-028A-C	2,000 kW*	1607

* These units could have been billed under the fee schedule for fuel burning equipment (based on max heat input MMBtu/hr) or under the electrical generation capacity. Electrical generation capacity will be used as it results in the highest fee.

APPENDICES

Appendix I: Authority to Construct Permits to be Implemented and Existing Permits to Operate
Appendix II: BACT Guidelines 4.12.1 and 4.12.2
Appendix III: New BACT Determination for Permit Units N-7365-35 and '-36
Appendix IV: Statewide Compliance Statement
Appendix V: Compliance Certification
Appendix VI: HRA and AAQA Summary
Appendix VII: Draft Authority to Construct Permits
Appendix VIII: Correspondences

Appendix I
Authority to Construct Permits to be Implemented and Existing Permits to Operate

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-4-5 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF ONE 18,500 GALLON SLURRY TANK AND ONE 78,050 GALLON SLURRY MIX TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-5, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, -10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. ATC shall be implemeted concurrently with or subsequent to ATC N-7365-4-4. [District Rule 2201] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. All vapors from the slurry tank shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-4-5 Dec 10 2015 1:43PM – EDGEMILR Joint Inspection NOT Required

7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit

8. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

13. The VOC content of the vapor in the slurry tank and slurry mix tank shall not exceed 10% by weight. [District Rules 2201 and 4455]

14. Operator shall conduct initial sampling from the slurry mix tank to qualify for exemption from fugitive component counts for components handling fluids with less than 10% VOC by weight. [District Rule 2201]

15. VOC content of vapor shall be determined by ASTM D1945, ASTM D1946, EPA Method 18 referenced as methane, or equivalent test method with prior District approval. [District Rule 2201]

16. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit

17. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit

18. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

19. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted within 120 days after initial start-up and at least once every twelve (12) months thereafter, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

23. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

24. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

25. During source testing, permittee shall maintain record of ethanol production rate measured in gal-ethanol/hour. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

27. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

29. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

30. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

31. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

34. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

36. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

37. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

38. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

39. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-5-5 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF 29,653 GALLON YEAST TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-6, '-7, '-8, '-9, -10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. All vapors from the slurry tank shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-5-5 : Dec 10 2015 1:43PM – EDGEHILR : Joint Inspection NOT Required

7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Fugitive VOC emissions from equipment leaks associated with this tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
16. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
17. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
18. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted within 60 days after recommencing the operation and at least once every twelve (12) months thereafter, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted within 60 days after recommencing the operation and at least once every 12 months thereafter, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

24. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

26. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201and 40 CFR Part 64] Federally Enforceable Through Title V Permit

29. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201and and 40 CFR Part 64] Federally Enforceable Through Title V Permit

30. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

31. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit

34. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

37. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

38. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

40. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

41. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

42. All records shall be retained on site for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

43. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

44. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-6-4 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF ONE 177,748 GALLON LIQUEFACTION TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-7, '-8, '-9, -10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. All vapors from the liquefaction tank shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-6-4 Dec 10 2015 1:43PM – EDGEHILR : Joint Inspection NOT Required

7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Fugitive VOC emissions from equipment leaks associated with the liquefaction tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
16. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
17. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
18. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months thereafter, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

24. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

26. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

29. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

30. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

31. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit

34. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7 [40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

37. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

38. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

40. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

41. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

42. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

43. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

44. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-7-5 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF FERMENTATION PROCESS CONSISTING OF FOUR 705,000 GALLON FIXED ROOF PROCESS TANKS, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-8) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-8). THE EXHAUST FROM THE PROCESS TANKS IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-7-5 Dec 10 2015 1:42PM – EDGEHILR Joint Inspection NOT Required

6. All vapors from the fermentation tanks shall be vented through the CO2 scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit

7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit

8. The overall control efficiency for the CO2 scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Controlled VOC emissions rate from each fermentation tank served by the CO2 scrubber vented to the RTO shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Controlled VOC emissions rate from the entire fermentation process served by the CO2 scrubber vented to the RTO shall not exceed 0.05365 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Fugitive VOC emissions from equipment leaks associated with the fermentation process shall not exceed 3.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit

16. VOC content in the fluid handled through the chiller system (shared with permit N-7365-8) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201, 4455, 40 CFR 60.480a (d)(5)] Federally Enforceable Through Title V Permit

17. The owner or operator shall keep records of the following items for VOC content testing: a.) the date, b.) vessel or location from where fluid is sampled, c.) name of the person taking and analyzing samples and company affiliation, d.) VOC content (% by wt.) in the sample, and e.) report of the test results. [District Rules 2201 and 4455, 40 CFR 60.486a (i)(3)] Federally Enforceable Through Title V Permit

18. The permittee shall include in the Operator Management Plan all components exclusively handling liquid streams with VOC content less than 10% by weight. [District Rule 4455] Federally Enforceable Through Title V Permit

19. The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components exclusively handling liquid streams with VOC content less than 10% by weight shall be submitted with the Operator Management Plan. [District Rule 4455] Federally Enforceable Through Title V Permit

20. VOC content shall be determined using South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids, or EPA Method 8260B, or other alterative test methods approved by the District prior to their use. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

21. Tanks shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit

23. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

24. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

25. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

26. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

29. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

30. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

31. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

32. The CO2 scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

34. The permittee shall monitor and record the water flow rate through the CO2 scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

35. If the water flow rate through the CO2 scrubber is less than 33 gal/minute, the permittee shall correct the water flow rate to exceed 33 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the CO2 scrubber continues to be less than 33 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the CO2 scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 33 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

37. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

38. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

40. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

41. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

42. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

43. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

44. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

45. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

46. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

47. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

48. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

49. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

50. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-8-6 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF ONE 928,526 GALLON FIXED ROOF BEERWELL PROCESS TANK, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-7) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-7). THE EXHAUST FROM THE PROCESS TANK IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-8-6 : Dec 10 2015 1:43PM – EDREHLR : Joint Inspection NOT Required

6. All vapors from the beerwell process tank shall be vented through the CO2 scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The overall control efficiency for the CO2 scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Controlled VOC emissions rate from the beerwell process tank served by the CO2 scrubber vented to the RTO shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Fugitive VOC emissions from equipment leaks associated with the beerwell process tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
15. VOC content in the fluid handled through the chiller system (shared with permit N-7365-7) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201, 4455, 40 CFR 60.480a (d)(5)] Federally Enforceable Through Title V Permit
16. The owner or operator shall keep records of the following items for VOC content testing: a.) the date, b.) vessel or location from where fluid is sampled, c.) name of the person taking and analyzing samples and company affiliation, d.) VOC content (% by wt.) in the sample, and e.) report of the test results. [District Rules 2201 and 4455, 40 CFR 60.486a (i)(3)] Federally Enforceable Through Title V Permit
17. The permittee shall include in the Operator Management Plan all components exclusively handling liquid streams with VOC content less than 10% by weight. [District Rule 4455] Federally Enforceable Through Title V Permit
18. The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components exclusively handling liquid streams with VOC content less than 10% by weight shall be submitted with the Operator Management Plan. [District Rule 4455] Federally Enforceable Through Title V Permit
19. VOC content shall be determined using South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids, or EPA Method 8260B, or other alterative test methods approved by the District prior to their use. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
20. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

23. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

24. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

26. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

28. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

29. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

30. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

31. The CO2 scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. The permittee shall monitor and record the water flow rate through the CO2 scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

34. If the water flow rate through the CO2 scrubber is less than 33 gal/minute, the permittee shall correct the water flow rate to exceed 33 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the CO2 scrubber continues to be less than 33 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the CO2 scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 33 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

37. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

38. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

40. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64]

41. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

42. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

43. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

44. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

45. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

46. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

47. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

48. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

49. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-9-3 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF DISTILLATION PROCESS CONSISTING OF ONE DE-GAS VESSEL, ONE BEER STRIPPER, ONE SIDE STRIPPER, ONE RECTIFIER, TWO MOLECULAR SIEVES AND ONE 200 PROOF ETHANOL CONDENSER, ALL SERVED BY KOCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-10 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All vapors from the distillation process shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-9-3 : Dec 10 2015 1:43PM -- EDGEHILR : Joint Inspection NOT Required

6. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Controlled VOC emissions rate from the distillation process served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOX/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOX/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Fugitive VOC emissions from equipment leaks associated with the distillation process shall not exceed 3.9 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
19. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
20. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

24. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

25. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

26. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]

27. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

29. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

30. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

31. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

33. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

34. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

35. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

36. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

37. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

38. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

39. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

40. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-10-4 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF ONE 190,400 GALLON PROCESS CONDENSATE TANK, COLLECTING WATER FROM THE CO2 AND VENT GAS SCRUBBERS, SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-11): INCREASE ANNUAL ETHANOL PRODUCTION AND REDUCE COMBINED VOC EMISSION FACTORS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-10-4 Dec 10 2015 1:43PM -- EDCEHILR : Joint Inspection NOT Required

6. All vapors from the process condensate tank shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Controlled VOC emissions rate from the distillation process served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Fugitive VOC emissions from equipment leaks associated with this process condensate tank shall not exceed 0.2 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
17. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
18. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
19. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

23. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

24. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

26. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

29. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

30. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]

31. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

32. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

33. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

34. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

37. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

38. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

39. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

40. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

41. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

42. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

43. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

44. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-7365-11-7 **ISSUANCE DATE:** 12/10/2015

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF WET CAKE PROCESS CONSISTING OF ONE 194,400 GALLON WHOLE STILLAGE TANK, ONE CENTRIFUGE SYSTEM WITH FIVE CENTRIFUGES, ONE 127,000 GALLON THIN STILLAGE TANK, THREE EVAPORATORS, ONE 129,600 GALLON SYRUP TANK, CORN OIL EXTRACTION SYSTEM CONSISTING OF ONE 36,000 GALLON HEAT SOAK TANK, THREE CENTRIFUGES, ONE 800 GALLON BUFFER TANK, ONE 1,285 GALLON FINAL PRODUCT TANK, TWO 10,500 GALLON CORN OIL LOADOUT STORAGE TANKS ALL SERVED BY AN KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-10) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-10) AND A TRUCK LOADOUT SYSTEM: INCREASE ANNUAL ETHANOL PRODUCTION, REDUCE CORN OIL LOADOUT EMISSION FACTOR, INCREASE CORN OIL LOADOUT RATE, REDUCE CORN OIL FUGITIVE EMISSIONS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) N-7365-11-6 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-7365-11-7 : Dec 10 2015 1:42PM – EDOEHLER : Joint Inspection NOT Required

5. Wet cake conveyors between each tank or each emissions unit at the wet cake process unit shall be fully enclosed. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All vapors from the wet cake process shall be vented through the vent gas scrubber and then through the RTO. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The overall control efficiency for the vent gas scrubber vented to the RTO shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Controlled VOC emissions rate from the distillation process served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Controlled VOC emissions rate from the exhaust of the RTO while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Loading losses from the distiller's syrup loadout operation shall not exceed 0.526 lb-VOC/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Loading losses from the distiller's corn oil loadout operation shall not exceed 0.000175 lb-VOC/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The maximum throughput of distiller's syrup loaded shall not exceed any of the following: 67,371 gallons per day or 24,590,415 gallons per year. [District Rule 2201]
17. The maximum throughput of corn oil loaded shall not exceed any of the following: 26,000 gallons per day or 5,000,000 gallons per year. [District Rule 2201]
18. Fugitive VOC emissions from equipment leaks associated with the wet cake process shall not exceed 2.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Fugitive VOC emissions from equipment leaks associated with the corn oil operation shall not exceed 0.03 lb/day. [District Rule 2201]
20. Fugitive VOC emissions from equipment leaks associated with the distiller's syrup operation shall not exceed 2.9 lb/day. [District Rule 2201]
21. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Fugitive VOC emissions from equipment leaks associated with the corn oil operation shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-9, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Leak Rate/Screening Value Correlations Emission Factors. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

23. Fugitive VOC emissions from equipment leaks associated with the distiller's syrup operation shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-9, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Leak Rate/Screening Value Correlations Emission Factors. [District Rule 2201]

24. The permittee shall maintain daily and annual records, in gallons, of the quantity of distiller's syrup and corn oil loaded at this facility. [District Rule 2201]

25. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

26. Permittee shall maintain accurate component count and shall update such records when new components are approved and installed. [District Rule 2201]

27. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit

29. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = {[(CO2 Scrubber Inlet + Vent Gas Scrubber Inlet) - RTO Outlet] / [CO2 Scrubber Inlet + Vent Gas Scrubber Inlet]} x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

31. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

32. During source testing, permittee shall maintain records of the amount of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit

33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

34. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

35. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

37. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

38. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

40. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

41. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

42. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

43. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

44. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

45. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

46. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

47. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

48. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit

49. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit

50. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

51. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

52. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: N-7365-20-4 **EXPIRATION DATE:** 09/30/2017

EQUIPMENT DESCRIPTION:
75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #1)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]
4. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
5. Emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu; 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O2); 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
6. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
8. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
11. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
12. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE